

Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: Slawson Exploration Company, Inc.
Well Name/Number: Citadel No. 2-11-2H
Location: SW SW Section 11 T26N R59E
County: Roosevelt, MT; Field (or Wildcat) Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 25-35 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick rig to drill to 19,602' MD/10,230' TVD.

Possible H₂S gas production: Slight possibility of H₂S gas production.

In/near Class I air quality area: No Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under rule 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Triple derrick drilling rig to drill a single lateral horizontal Bakken Formation test, 19,602' MD/10,230' TVD.

Water Quality

(possible concerns)

Salt/oil based mud: Yes to intermediate casing string hole to be drilled with oil based invert drilling fluids. Horizontal lateral will be drilled with produced brine water. Surface casing hole to be drilled with freshwater and freshwater mud.

High water table: Possible high water table.

Surface drainage leads to live water: Yes, closest drainage is the Missouri River, about 5/8 of a mile to the south from this location.

Water well contamination: No, closest water wells are about 3/8 to 1/2 of a mile to the northeast and 1/4 of a mile to the west from this location. Depth of these wells range from 64' to 800'. Surface casing will be drilled with freshwater, casing set to 1593' and steel casing set at 1593' and cemented back to surface.

Porous/permeable soils: Yes, sandy silty clay soils.

Class I stream drainage No, Class I stream drainage.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☒ Closed mud system

☒ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 1593' of surface casing will be set well below freshwater zones in adjacent water wells. Also, covering Base of the Fox Hills aquifer. Surface hole will be drilled with freshwater and freshwater drilling fluids to 1593'+. Steel surface casing will be run and cemented to surface from 1593'.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: No, location will require small cut, up to 4.7' and small fill, up to 2.3', required.

Loss of soil productivity: Slight, location to be restored after drilling well if well is nonproductive. If productive unused portion of wellsite will be reclaimed.

Unusually large wellsite: Yes, location is an extra large wellsite, 420'X500' in size.

Damage to improvements: Slight, surface use is grassland.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☒ Other: Requires DEQ General Permit for Storm Water Discharge Associated with

Construction Activity, under ARM 17.30.1102(28).

Comments: Access will be over existing state highway, FAS 327. About 31' of new access road will be built to access this location from the existing county road. Oil based invert drilling fluids will be recycled.

Oil based drill cuttings will be buried in an approved offsite lined pit. Freshwater cuttings will be buried in an on site earthen pit. Completion pit fluids will be hauled to a permitted Class II saltwater disposal.

No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Residences, about 3/4 of a mile to the northwest, 1 mile to the northwest and 7/8 of a mile to the southeast from this location. Fort Union Trading Post National Historic Site is about 1.25 miles to the southeast from this location.

Possibility of H2S: Slight

Size of rig/length of drilling time: Triple drilling rig 25 to 35 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems. Noise should not be a problems, sufficient distance from residence to rig should mitigate this.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified in the area.

Proximity to recreation sites: None identified in the area.

Creation of new access to wildlife habitat: None

Conflict with game range/refuge management: None

Threatened or endangered Species: Listed threatened or endangered species are Pallid Sturgeon, Piping Plover, Interior Lease Tern and Whooping Crane.

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Screening/fencing of pits, drillsite

☐ Other: _____

Comments: Private grass surface lands. NH tracker website indicates 3 species of concern, Great Blue Heron, Piping Plover, Whooping Crane. One potential species of concern, Haydon Shrew. Location

is adjacent to highway, FAS327 and overhead power lines. Location will be about ½ mile from the low water line of the Missouri River. No concerns.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: Private surface lands.

Mitigation

☐ avoidance (topographic tolerance, location exception)

☐ other agency review (SHPO, DSL, federal agencies)

☐ Other: _____

Comments: Private grass surface lands at this location. No concerns.

Social/Economic

(possible concerns)

☐ Substantial effect on tax base

☐ Create demand for new governmental services

☐ Population increase or relocation

Comments: Well is a wildcat well and may not be productive. Even if productive should not create any substantial effect on the tax base. No concerns.

Remarks or Special Concerns for this site

19,602' MD/10,230' TVD single lateral horizontal Bakken formation well.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected, only some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki

(title): Chief Field Inspector

Date: July 19, 2011

Other Persons Contacted:

(Name and Agency)

Montana Bureau of Mines and Geology, Groundwater Information Center website.

(subject discussed)

Water wells in Roosevelt County

October 19, 2010

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Roosevelt County, Montana

(subject discussed)

July 19, 2011

(date)

Montana Natural Heritage Program Website

(Name and Agency)

Heritage State Rank= S1, S2, S3 T26N R59E

(subject discussed)

October 19, 2010

(date)

If location was inspected before permit approval:

Inspection date: October 21, 2010 & June 27, 2011

Inspector: Schmidt

Others present during inspection: None